Message

From: McGee, Tom [tom.mcgee@aecom.com]
Sent: 7/20/2017 10:28:40 AM
To: Abdellatif, Sameh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=02da35b30c2c442a802a940056ed76bb-Abdellatif, Sameh]; Amber.hawk@salemcountynj.gov; Anne Pavelka anne.pavelka@dep.state.nj.us (anne.pavelka@dep.state.nj.us) [anne.pavelka@dep.state.nj.us]
CC: Andrew Hartten (andrew.s.hartten@chemours.com) [andrew.s.hartten@chemours.com]; Maryann Nicholson (Maryann.J.Nicholson@chemours.com) [Maryann.J.Nicholson@chemours.com]; Michael.L.Crissey@chemours.com; Michael.B.Ohm@dupont.com; Dawn.M.Hughes-1@chemours.com; Scott Northey (scott.t.northey@chemours.com) [scott.t.northey@chemours.com]; Whelihan, David [david.whelihan@aecom.com]; Norcross, Scott [scott.norcross@aecom.com]; McCue, Dana [dana.mccue@aecom.com]
Subject: Chemours Chambers Works Vapor Intrusion Mitigation Response Action Report for Building 1207 (NJDEP SI# 008221)
Attachments: 008221_VI_MRAR_1207-FINAL.pdf

On behalf of The Chemours Company (Chemours) and in accordance with N.J.A.C. 7:26E-1.15 (Receptor Evaluation-Vapor Intrusion) and New Jersey Department of Environmental Protection's (NJDEP's) Vapor Intrusion Technical Guidance (VIG), AECOM is submitting a Vapor Intrusion Mitigation Response Action Report for Building 1207 (VI MRAR).

In accordance with N.J.A.C. 7:26E-1.15(e), the Chemours Chambers Works manufacturing complex in Salem County, New Jersey was required to submit a VI MRAR within 180 days of receiving data from the laboratory. Please see attached, with hard copies to follow.

Per the July 20, 2015 email correspondence between Chemours, the United States Environmental Protection Agency (EPA), and the NJDEP, proper direction was given regarding vapor investigation submittals. All vapor investigations submittals will be addressed to EPA, however, compliance with the NJDEP regulations and NJDEP's VIG remains necessary.

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July 20, 2017

Mr. Sameh Abdellatif
U.S. EPA Region 2
RCRA Programs Branch
290 Broadway Ave, 22nd Floor
New York, NY 10007-1866

Vapor Intrusion Mitigation Response Action Report for Building 1207
Chemours Chambers Works, Deepwater, NJ
NJDEP SI# 008221

Dear Mr. Abdellatif:

On behalf of The Chemours Company (Chemours) and in accordance with N.J.A.C. 7:26E-1.15 (Receptor Evaluation-Vapor Intrusion) and New Jersey Department of Environmental Protection's (NJDEP's) Vapor Intrusion Technical Guidance (VIG), AECOM is submitting a Vapor Intrusion Mitigation Response Action Report (VI MRAR) for Building 1207.

In an email dated July 20, 2015 to Chemours and the United States Environmental Protection Agency (EPA), NJDEP provided clarification that future submittals were to be submitted to EPA; however, compliance with the NJDEP regulations and VIG remains necessary.

This VI MRAR is in compliance with the 180-day notification from when analytical data were received from the laboratory. During a confirmatory round of indoor air sampling, indoor air samples exceeded New Jersey Non Residential Indoor Air Screening Levels (NJNRIASLs) within the Chemours Chambers Works manufacturing area at Building 1207. A Vapor Concern Mitigation Plan was submitted on March 24, 2017. The mitigation system installation was completed and began operation on May 15, 2017. Verification sampling was performed on May 25, 2017 with results indicating no exceedances of IASLs. An updated NJDEP spreadsheet is attached.

If you have any questions or want to discuss further, please call me at 302-773-1289.

Sincerely,

Andrew Hartten
Project Director
Corporate Remediation – NJ

cc: Anne Pavelka, NJDEP Case Manager (hard copy and CD)
AECOM Chambers Works File (60388469) (hard copy)
Salem County Board of Health
Chemours File

AECOM

Vapor Intrusion Mitigation Response Action Report for Building 1207

NJDEP SI #008221
Chambers Works
Deepwater, New Jersey

Submitted on behalf of:
The Chemours Company

Submitted by:
AECOM
Sabre Building
Suite 300
4051 Ogletown Road
Newark, DE 19713

Project Number: 60388469
Date: July 2017

Table of Contents

List of Tables

List of Figures

List of Appendices

1.0 Introduction

The Chemours Company (Chemours) implemented a vapor intrusion (VI) remedial investigation for the Chemours Chambers Works Complex (the site) located in Deepwater, New Jersey. A phased approach has been conducted for the investigation consistent with the New Jersey Department of Environmental Protection (NJDEP) approved *Vapor Intrusion Remedial Investigation Work Plan* (URS, 2014b).

During the Phase III sampling round in November 2016, exceedances of New Jersey Non-Residential Soil Gas Screening Levels (NJNRSGSLs) were identified in 12 buildings and follow-up indoor air sampling was conducted at these buildings in December 2017. The Phase III indoor air sampling identified a Vapor Concern (VC) in one building (Building 1207) located within area of concern (AOC) 1 in the Jackson Labs portion of the site. A Vapor Concern Notice was submitted to NJDEP on February 6, 2017, and a Vapor Concern Mitigation Plan was submitted on March 24, 2017.

This Vapor Intrusion Mitigation Response Action Report (VI MRAR) outlines the actions taken to address the VC and monitor the effectiveness of the selected remedy to eliminate the exposure. This plan was developed in accordance with N.J.A.C. 7:26E-1.15(e) and the NJDEP Vapor Intrusion Technical Guidance (VIG) (Version 3.10) (NJDEP, 2013). In accordance with the VIG, the following information is presented in this VI MRAR:

- Identification of the property/building with municipal lot and block numbers
- Description and technical justification for the mitigation proposed
- Submission of all relevant data (to date) and appropriate spreadsheets and forms
- Post-mitigation sampling plan to confirm the success of the mitigation
- An operation, maintenance, and monitoring plan
- A VC Response Action form

2.0 Background

The 1,455-acre Chemours Chambers Works Complex is located along the eastern shore of the Delaware River in Deepwater, New Jersey. Operations began in 1892 when Carneys Point Works was constructed at the northern end of the site to manufacture smokeless gunpowder and nitrocellulose. By 1917, manufacturing operations had extended south to the Salem Canal with the construction of the Deepwater Dye Works (later renamed Chambers Works). Carneys Point Works operated continuously from 1892 until it was razed in the early 1980s. The remainder of the site has been operating continuously since 1917, manufacturing a multitude of chemical products and intermediates. A detailed discussion of site environmental setting, history, and regulatory background is provided in the Comprehensive R*esource Conservation and Recovery Act (RCRA) Facility Investigation Report* (RFI Report, URS, 2014b).

In accordance with N.J.A.C. 7:26E-1.17, a Receptor Evaluation was conducted in February 2011 to further evaluate the VI pathway at the site. The evaluation noted that concentrations of volatile compounds in on-site monitoring wells exceeded the NJDEP generic groundwater screening levels for the VI pathway (GWSLs). Generic GWSLs, which are based on residential land use, are not consistent with current on-site land use and on-site building conditions. Therefore, consistent with Section 2.4.5 of NJDEP's Vapor Intrusion Guidance (NJDEP, 2013), a site-specific evaluation was conducted to further evaluate potential on-site VI pathways.

Results of the site-specific evaluation recommended further evaluation of the potential soil vapor pathway for on-site buildings. Currently, approximately 135 potentially occupied structures have been identified in the Chambers Works manufacturing area. These include continuously and intermittently occupied structures as well as unoccupied structures (determined through field verification). Chemours intends to evaluate both continuously and intermittently occupied types of structures. A phased approach for the investigation was proposed and implemented as detailed in the NJDEP-approved VI RIWP (URS, 2014a). Chemours has addressed structures with continuous occupancy first. This initial phase of investigation was completed in April/May 2014, with Phase II being completed in February/March 2016.

Phase I of the VI investigation was conducted in April 2014. The initial phase of the investigation consisted of sub-slab soil gas sampling at 15 structures as documented in the VI RIWP (URS, 2014a). Confirmatory sub-slab sampling combined with indoor/ambient air sampling was then conducted in May 2015 for the 12 buildings where exceedances of NJNRSGSLs were identified during the April 2014 investigation. Results from the May 2015 sampling event identified a VC in one building (J-27) for chloroform. Follow-up indoor air sampling was conducted in July 2015 and January 2016.

Phase II of the VI investigation was conducted between February 2016 and April 2016, which sampled 30 additional buildings. During the Phase II VI investigation, constituents detected above NJNRSGSLs in the sub-slab soil gas were 1,1,2-trichlorotrifluoroethane (Freon 113), 1,1-dichloroethane (DCA), 1,2-DCA, 1,2-dichloropropane, benzene, bromoethene, carbon tetrachloride, chloroform, dichlorodifluoromethane (Freon 12), naphthalene, tetrachloroethene (PCE), trichloroethene (TCE), trichlorofluoromethane (Freon 11), and vinyl chloride. Sub-slab soil gas exceedances were detected in 22 of the 30 buildings sampled. Based on the results of the sub-slab investigation, indoor/ambient air sampling was conducted for 18 of the 22 buildings in March 2016. Results from the

March 2016 sampling event identified a VC in Building J-26 for chloroform and in Building 745 for PCE, and an immediate environmental concern (IEC) in Building 745 for TCE. These three sample locations were resampled on April 26, 2016 and the exceedances were confirmed.

In summary, the results of the Phase I and II VI investigation have identified complete VI pathways in three of the 45 buildings investigated. In these three buildings, response actions have been or are currently being implemented. A more detailed summary can be found in the VI Remedial Investigation Report (VIRIR, AECOM 2016).

The Phase III VI investigation was conducted between November 2016 and December 2016 and consisted of the investigation of 15 structures. During the Phase III VI investigation, constituents detected above NJNRSGSLs in the sub-slab soil gas included: Freon 113, 1,2-dichlorobenzene, 1,3-butadiene, 1,4-dichlorobenzene, benzene, carbon tetrachloride, chloroform, ethylbenzene, PCE, TCE, Freon 11, and vinyl chloride.

During the Phase III indoor air sampling, only one constituent (chloroform) was detected above New Jersey non-residential indoor air screening levels (NJNRIASL) at Building 1207. A more detailed summary can be found in the Vapor Intrusion Technical Memorandum for Phase III (AECOM, 2017a).

Per the July 20, 2015 email correspondence between Chemours, the United States Environmental Protection Agency (EPA), and the NJDEP, proper direction was given regarding vapor investigation submittals. All vapor investigations submittals will be addressed to EPA; however, compliance with the NJDEP regulations and NJDEP's VIG remains necessary.

3.0 Overview of Actions

3.1 Location Description

Building 1207 is located within the active manufacturing area of the Chemours Chambers Works site (Block 301, Lot 1) Deepwater, New Jersey, Salem County.

The building is roughly 1,211 feet^2 (25.5' x 47.5'). The building is divided up into two sides: a two room electrical control room (ECR) and a chemical process side. Samples were not collected in the process side due to the presence of chemical hazards. The building has individual space heating and cooling units for climate control.

3.2 Summary of Mitigation

The *Chambers Works Vapor Concern Mitigation Plan for Building 1207* (AECOM, 2017a) outlines the mitigation plan selected for Building 1207. In order to address the vapor concern within Building 1207, two wall mounted exhaust fans have been installed and will continuously operate to increase the air exchange rate within the ECR in order to regulate indoor air quality (IAQ) to meet applicable NJNRIASLs.

3.3 Existing Data and Forms

Analytical results are provided in Tables 1 through 3 along with the NJDEP Vapor Mitigation Form and Data Spreadsheet found in Appendix B and C, respectively.

During two rounds of indoor air sampling, chloroform was detected in Building 1207 in two locations (AOC3-JL-1207-1 and AOC3-JL-1207-2) (see Figure 1). Chloroform concentrations ranged between 3 micrograms per cubic meter (µg/m^3) and 6 µg/m^3. The NJNRIASL for chloroform is 2 µg/m^3.

The post-mitigation sampling results are provided in Table 3. The chloroform concentration at both indoor air sample locations was 1 µg/m^3, which is below the NJNRIASL of 2 µg/m^3.

3.4 System Operation, Maintenance, and Monitoring

The following activities will be conducted and recorded to support the long-term and effective operation of the mitigation plan:

- The exhaust fans will be checked for unusual noise and/or vibration.
- Foundation/wall sealing will be checked for any additional areas requiring sealing/re-sealing.
- Annual indoor air sample collection will be performed to indicate indoor air concentrations remain below applicable NJNRIASLs.

Routine maintenance will include regularly scheduled inspections of the exhaust fan usage and preventive maintenance. Results of each inspection will be documented on appropriate maintenance field forms and submitted to NJDEP and EPA, as required, to document that the protective measures are still in-place and functioning properly.

Building operators will be given a telephone number to use at any time if they have questions or if they suspect a problem with the exhaust system. Calls by operators will

be responded to by conducting a non-routine maintenance visit to inspect and repair the system, if necessary. The system's "as found" and "as left" operating performance will be documented accordingly.

The system monitoring timeframes will be as follows:

Operation Monitoring and Maintenance (OMM)	First Year OMM Monthly system inspection, semi-annual indoor air (IA) sampling, and monthly verification of system integrity/usage. Second Year OMM & Beyond Annual system inspection and verification with baseline values for as long as the building is in use.
Corrective Actions during VS or OMM	For an exceedance of applicable NJNRIASLs or variation from commissioning values: • Check exhaust system for malfunctions, modify or augment the system. • Re-commission the system. • Collect verification sampling and re-start OMM.

3.5 OMM Inspection and Indoor Air Sampling

The objective of the OMM is to evaluate the mitigation plans effectiveness on indoor air quality in Building 1207 after the VC has been eliminated. Based on the confirmatory post mitigation sampling results, increasing the air exchange rate within the building with the existing exhaust fans has eliminated the VC within the building. However, routine OMM inspections and indoor air sampling is still warranted due to the potential for sub-slab soil vapors to migrate into the building. Therefore, as mentioned above, the following actions will be taken to ensure the exposure risks to workers are properly addressed:

- Monthly system inspections will be conducted to make sure that the exhaust fans are operating properly.
- Annual indoor air samples will be collected from the same investigation locations within Building 1207 (Samples will be collected during the heating season).
- Indoor air sample results will be compared to NJNRIASLs for non-residential land use, to verify the effectiveness of the mitigation plan. Ambient (outdoor) air samples will also be collected simultaneously with the indoor air samples over an 8-10 hour period. The ambient air sample location will be selected based on a forecast of the prevailing wind direction for the sampling period.

Samples will be submitted for laboratory analysis of chloroform by EPA TO-15 Method. Sample results will be reported by the laboratory to the method detection limit (MDL). Sample analysis will be conducted by TestAmerica Laboratories in Burlington, Vermont, or other laboratories as certified by New Jersey.

Sampling and analysis will be performed in accordance with the Quality Assurance Project Plan (QAPP) previously provided in the VI Remedial Investigation Work Plan (RIWP) (URS, 2014b).

The results of this sampling and data evaluation will be reported per applicable NJDEP reporting requirements.

3.6 Reporting

All applicable NJDEP Site Remediation Program (SRP) forms will be submitted to the NJDEP and EPA documenting all the OMM inspections and sampling results on an annual basis.

4.0 References

AECOM. 2017a *Vapor Intrusion Technical Memorandum for Phase III,* Chemours Chambers Works Complex, Deepwater, New Jersey. February 2017.

AECOM. 2017b *Chambers Works Vapor Concern Mitigation Plan for Building 1207.* Chemours Chambers Works Complex, Deepwater, New Jersey. March 2017.

URS. 2014a. *Comprehensive RCRA Facility Investigation Report.* DuPont Chambers Works Complex, Deepwater, New Jersey. October 2014.

URS. 2014b. *Vapor Intrusion Remedial Investigation Work Plan.* DuPont Chambers Works Complex, Deepwater, New Jersey. February 2014.

URS. 2013. *Chambers Works HASP Addendum 8 – Vapor Intrusion Sampling.* DuPont Chambers Works Complex, Deepwater, New Jersey.

NJDEP. 2013. *Vapor Intrusion Guidance.* January 2013.

Tables

Table 1
Building 1207 Sub Slab Soil Gas Analytical Data (2016)
Chemours Chambers Works
Deepwater, New Jersey

Analyte	Units	NJ NRSGS	Field Sample ID Location Sample Date	VIPH3-SG-AOC3-JL-1207-1 AOC3-JL-1207-1 11/10/2016	VIPH3-SG-AOC3-JL-1207-2 AOC3-JL-1207-2 11/10/2016
1,1,1-Trichloroethane	UG/M3	1100000		<2000	<1900
1,1,2,2-Tetrachloroethane	UG/M3	34		<2500	<2300
1,1,2-Trichloroethane	UG/M3	38		<2000	<1900
1,1,2-Trichlorotrifluoroethane	UG/M3	6600000		2200000	1100000
1,1-Dichloroethane	UG/M3	380		<1500	<1400
1,1-Dichloroethene	UG/M3	44000		21000	6300
1,2,4-Trichlorobenzene	UG/M3	440		<6800	<6300
1,2-Dibromoethane (EDB)	UG/M3	38		<2800	<2600
1,2-Dichlorobenzene	UG/M3	44000		<2200	<2100
1,2-Dichloroethane	UG/M3	24		<1500	<1400
1,2-Dichloropropane	UG/M3	61		<1700	<1600
1,3-Butadiene	UG/M3	20		<810	<760
1,4-Dichlorobenzene	UG/M3	56		<2200	<2100
Acetone	UG/M3	6800000		<22000	<20000
Allyl Chloride	UG/M3	100		<2900	<2700
Benzene	UG/M3	79		<1200	<1100
Bromodichloromethane	UG/M3	34		<2500	<2300
Bromoethene	UG/M3	22		<1600	<1500
Bromoform	UG/M3	560		<3800	<3500
Carbon Disulfide	UG/M3	150000		<2800	<2700
Carbon Tetrachloride	UG/M3	100		<2300	<2200
Chlorobenzene	UG/M3	11000		<1700	<1600
Chlorodibromomethane	UG/M3	43		<3100	<2900
Chloroform	UG/M3	27		**74000**	**230000**
cis-1,3-Dichloropropene	UG/M3	150		<1700	<1600
Cyclohexane	UG/M3	1300000		<1300	<1200
Dichlorodifluoromethane	UG/M3	22000		<4500	<4200
Ethyl Chloride	UG/M3	2200000		<2400	<2300
Ethylbenzene	UG/M3	250		<1600	<1500
Hexachlorobutadiene	UG/M3	53		<3900	<3600
Hexane	UG/M3	150000		<1300	<1200
Meta- And Para-Xylene	UG/M3	--		<4000	<3700
Methyl Bromide	UG/M3	1100		<1400	<1300
Methyl Chloride	UG/M3	20000		<1900	<1800
Methyl Ethyl Ketone	UG/M3	1100000		<2700	<2500
Methyl Isobutyl Ketone	UG/M3	660000		<3700	<3500
Methyl Tertiary Butyl Ether	UG/M3	2400		<1300	<1200
Methylene Chloride	UG/M3	61000		<3200	<3000
Naphthalene	UG/M3	26		<4800	<4500
Ortho-Xylene	UG/M3	--		<1600	<1500
Styrene	UG/M3	220000		<1600	<1500
Tetrachloroethene	UG/M3	2400		**350000**	**62000**
Toluene	UG/M3	1100000		<1400	<1300
trans-1,2-Dichloroethene	UG/M3	13000		<1500	<1400
trans-1,3-Dichloropropene	UG/M3	150		<1700	<1600
Trichloroethene	UG/M3	150		**4300**	<1800
Trichlorofluoromethane	UG/M3	150000		<2100	<1900
Vinyl Chloride	UG/M3	140		<940	<870
Xylenes	UG/M3	22000		<5600	<5200

NJ NRSGSL - New Jersey Non-Residential Soil Gas Screening Level (March 2013)
Yellow shading indicates exceedance of SL
Gray shading indicates detection limit above SL

Table 2
Building 1207 Indoor Air Analytical Data (2016-2017)
Chemours Chambers Works
Deepwater, New Jersey

Analyte[1]	Units	NJ NRIASL	NJ NR RAL	Field Sample ID Location Sample Date	VIPH3-IA-AOC3-JL-1207-1-122016 AOC3-JL-1207-1 12/20/2016	VIPH3-IA-AOC3-JL-1207-2-122016 AOC3-JL-1207-2 12/20/2016	VIPH3-IA-AOC3-JL-1207-1-012517 AOC3-JL-1207-1-012517 01/25/2017	VIPH3-IA-AOC3-JL-1207-2-012517 AOC3-JL-1207-2-012517 01/25/2017
1,1,2,2-Tetrachloroethane	UG/M3	3	20		--	--	--	--
1,1,2-Trichlorotrifluoroethane	UG/M3	130000	260000		--	--	--	--
1,2,4-Trichlorobenzene	UG/M3	9	18		<4	<4	--	--
1,2-Dibromoethane (EDB)	UG/M3	4	4		<2	<2	--	--
1,2-Dichloroethane	UG/M3	2	50		--	--	--	--
1,3-Butadiene	UG/M3	1	18		--	--	--	--
1,4-Dichlorobenzene	UG/M3	3	100		<1	<1	--	--
Benzene	UG/M3	2	160		1	1	--	--
Carbon Tetrachloride	UG/M3	3	200		<1	<1	--	--
Chloroform	UG/M3	2	50		**6**	**5**	**5**	**3**
Ethylbenzene	UG/M3	5	500		--	--	--	--
Naphthalene	UG/M3	3	26		--	--	--	--
Tetrachloroethene	UG/M3	47	360		12	9	--	--
Trichloroethene	UG/M3	3	18		<1	<1	--	--
Trichlorofluoromethane	UG/M3	3100	6200		--	--	--	--
Vinyl Chloride	UG/M3	3	300		<0.5	<0.5	--	--

NJ IASL - New Jersey Indoor Air Screening Level (March 2013)
NJ RAL - New Jersey Rapid Action Level (March 2013)
Yellow shading indicates exceedance of SL

1 - Indoor air analyte list based on constituents in soil gas with an exceedance. AOC-specific constituents with GWSL exceedances in groundwater and with elevated detection limits in soil gas were also included, where applicable.

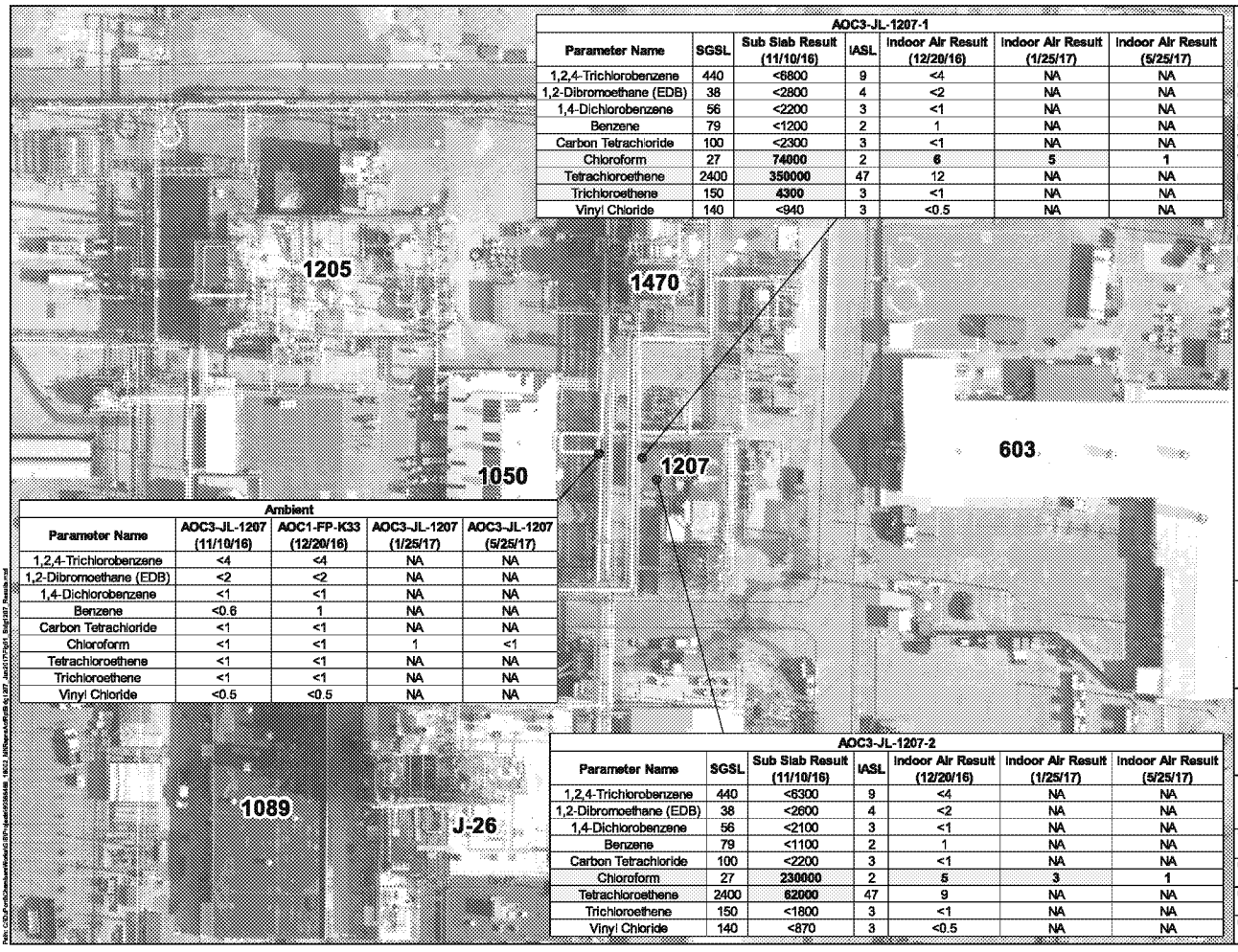
Table 3
Building 1207 Indoor Air Verification Sampling (2017)
Chemours Chambers Works
Deepwater, New Jersey

Analyte[1]	Units	NJ NRIASL	NJ NR RAL	Field Sample ID Location Sample Date	VIPH3-IA-AOC3-JL-1207-1-052517 AOC3-JL-1207-1-052517 05/25/2017	VIPH3-IA-AOC3-JL-1207-2-052517 AOC3-JL-1207-2-052517 525/2017	VIPH3-AA-AOC3-JL-1207-052517 AOC3-JL-1207 525/2017
Chloroform	UG/M3	2	50		1	1	<1

NJ IASL - New Jersey Indoor Air Screening Level (March 2013)
NJ RAL - New Jersey Rapid Action Level (March 2013)

1 - Indoor air analyte list based on constituents in soil gas with an exceedance. AOC-specific constituents with GWSL exceedances in groundwater and with elevated detection limits in soil gas were also included, where applicable.

Figures



AOC3-JL-1207-1

Parameter Name	SGSL	Sub Slab Result (11/10/16)	IASL	Indoor Air Result (12/20/16)	Indoor Air Result (1/25/17)	Indoor Air Result (5/25/17)
1,2,4-Trichlorobenzene	440	<6800	9	<4	NA	NA
1,2-Dibromoethane (EDB)	38	<2800	4	<2	NA	NA
1,4-Dichlorobenzene	56	<2200	3	<1	NA	NA
Benzene	79	<1200	2	1	NA	NA
Carbon Tetrachloride	100	<2300	3	<1	NA	NA
Chloroform	27	74000	2	6	5	1
Tetrachloroethene	2400	350000	47	12	NA	NA
Trichloroethene	150	4300	3	<1	NA	NA
Vinyl Chloride	140	<940	3	<0.5	NA	NA

Ambient

Parameter Name	AOC3-JL-1207 (11/10/16)	AOC1-FP-K33 (12/20/16)	AOC3-JL-1207 (1/25/17)	AOC3-JL-1207 (5/25/17)
1,2,4-Trichlorobenzene	<4	<4	NA	NA
1,2-Dibromoethane (EDB)	<2	<2	NA	NA
1,4-Dichlorobenzene	<1	<1	NA	NA
Benzene	<0.6	1	NA	NA
Carbon Tetrachloride	<1	<1	NA	NA
Chloroform	<1	<1	1	<1
Tetrachloroethene	<1	<1	NA	NA
Trichloroethene	<1	<1	NA	NA
Vinyl Chloride	<0.5	<0.5	NA	NA

AOC3-JL-1207-2

Parameter Name	SGSL	Sub Slab Result (11/10/16)	IASL	Indoor Air Result (12/20/16)	Indoor Air Result (1/25/17)	Indoor Air Result (5/25/17)
1,2,4-Trichlorobenzene	440	<6300	9	<4	NA	NA
1,2-Dibromoethane (EDB)	38	<2600	4	<2	NA	NA
1,4-Dichlorobenzene	56	<2100	3	<1	NA	NA
Benzene	79	<1100	2	1	NA	NA
Carbon Tetrachloride	100	<2200	3	<1	NA	NA
Chloroform	27	230000	2	5	3	1
Tetrachloroethene	2400	82000	47	9	NA	NA
Trichloroethene	150	<1800	3	<1	NA	NA
Vinyl Chloride	140	<870	3	<0.5	NA	NA

LEGEND

⊗ SUB-SLAB SOIL GAS SAMPLE LOCATION

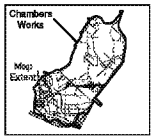
Notes:
1 - All Sub Slab Soil Gas (SSSG) locations were analyzed for TO-15, only exceedances are listed on this figure.

2 - Indoor air analyte list based on constituents in soil gas with an exceedance AOC-specific constituents with GWSL exceedances in groundwater and with elevated detection limits in soil gas were also included, where applicable.

NJ NRSGSL - New Jersey Non-Residential Soil Gas Screening Level (March 2013)
NJ IASL - New Jersey Indoor Air Screening Level (March 2013)

Yellow shading indicates exceedance of SL
Report Units are ug/m3

Map Projection: NAD83 NJ State Plane feet
2014 Aerial Imagery provided by Axis Geospatial LLC.



0 25 50 100
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4051 Ogletown Road
Newark, DE 19713

BUILDING 1207 SUB-SLAB SOIL GAS AND INDOOR AIR SAMPLING LOCATIONS AND RESULTS

CHEMOURS CHAMBERS WORKS
DEEPWATER, NEW JERSEY

TASK NUMBER: 16001	PROJECT NUMBER: 60388469
DESIGNED BY: T.MCGEE	DATE: 6/16/2017
DRAWN BY: C.DUFFY	FIGURE NUMBER: 1
DATA QUALITY CHECK BY: T.MCGEE	

Appendices

Appendix A

Vapor Intrusion Vapor Concern Mitigation Plan for Building 1207 (March 2017)

Chemours™

The Chemours Company
Route 130 and Canal Road
Deepwater, NJ 08023

March 24, 2017

Ms. Theresa Hwilka
U.S. EPA Region II
RCRA Programs Branch
290 Broadway Ave, 22nd Floor
New York, NY 10007-1866

Vapor Intrusion Vapor Concern Mitigation Plan Building 1207
Chemours Chambers Works, Deepwater, NJ
NJDEP SI# 008221

Dear Ms. Hwilka:

On behalf of The Chemours Company (Chemours) and in accordance with N.J.A.C. 7:26E-1.15 (Receptor Evaluation-Vapor Intrusion) and New Jersey Department of Environmental Protection's (NJDEP's) Vapor Intrusion Technical Guidance (VIG), AECOM is submitting a Vapor Concern Mitigation Plan (VCMP).

This VCMP is in compliance with the 60-day notification from when analytical data were received from the laboratory. During a confirmatory round of indoor air sampling, indoor air samples exceeded NJDEP Indoor Air Screening Levels within the Chemours Chambers Works manufacturing complex at Building 1207. An updated NJDEP spreadsheet is attached.

If you have any questions or want to discuss further, please call me at 302-773-4293.

Sincerely,

Edward J Lutz
Project Director
Corporate Remediation – NJ

cc: Linda Range, NJDEP
Kim O'Connell, USEPA
AECOM Chambers Works File
Salem County Board of Health
Chemours File

AECOM

Environment

Submitted on behalf of:
The Chemours Company

Submitted by:
AECOM
Sabre Building
Suite 300
4051 Ogletown Road
Newark, DE 19713

Chambers Works Vapor Concern Mitigation Plan for Building 1207

NJDEP SI #008221
Deepwater, New Jersey

Project #: 60388469
March 2017

Table of Contents

List of Tables

List of Figures

List of Appendices

1.0 Introduction

The Chemours Company (Chemours) implemented a vapor intrusion (VI) remedial investigation for the Chemours Chambers Works Complex (the site) located in Deepwater, New Jersey. A phased approach has been conducted for the investigation consistent with the New Jersey Department of Environmental Protection (NJDEP) approved *Vapor Intrusion Remedial Investigation Work Plan* (URS, 2014a).

During the Phase III sampling round in November 2016, exceedances of New Jersey Non-Residential Soil Gas Screening Levels (NJNRSGSLs) were identified in 12 buildings and follow-up indoor air sampling was conducted at these buildings in December 2017. The Phase III indoor air sampling identified a Vapor Concern (VC) in one building (Building 1207) located within area of concern (AOC) 1 in the Jackson Labs portion of the site. A Vapor Concern Notice was submitted to NJDEP on February 6, 2017.

This Vapor Concern Mitigation Plan (VCMP) outlines the actions proposed to mitigate the VC and monitor the effectiveness of the selected mitigation to eliminate the exposure. This plan was developed in accordance with N.J.A.C. 7:26E-1.15(e) and the NJDEP Vapor Intrusion Technical Guidance (VIG) (Version 3.10) (NJDEP, 2013). In accordance with the VIG, the following information is presented in this VCMP:

- identification of the property/building with municipal lot and block numbers
- description and technical justification for the mitigation proposed
- submission of all relevant data (to date) and appropriate spreadsheets/forms
- post-mitigation sampling plan to confirm the success of the mitigation
- operation, maintenance and monitoring plan
- a VC Response Action form

2.0 Background

The 1,455-acre Chemours Chambers Works Complex is located along the eastern shore of the Delaware River in Deepwater, New Jersey. Operations began in 1892 when Carneys Point Works was constructed at the northern end of the site to manufacture smokeless gunpowder and nitrocellulose. By 1917, manufacturing operations had extended south to the Salem Canal with the construction of the Deepwater Dye Works (later renamed Chambers Works). Carneys Point Works operated continuously from 1892 until it was razed in the early 1980s. The remainder of the site has been operating continuously since 1917, manufacturing a multitude of chemical products and intermediates. A detailed discussion of site environmental setting, history, and regulatory background is provided in the Comprehensive Resource Conservation and Recovery Act (RCRA) Facility Investigation Report (RFI Report, URS, 2014b).

In accordance with N.J.A.C. 7:26E-1.17, a Receptor Evaluation was conducted in February 2011 to further evaluate the VI pathway at the site. The evaluation noted that concentrations of volatile compounds in on-site monitoring wells exceeded the NJDEP generic groundwater screening levels for the VI pathway (GWSLs). Generic GWSLs, which are based on residential land use, are not consistent with current on-site land use and on-site building conditions. Therefore, consistent with Section 2.4.5 of NJDEP's Vapor Intrusion Guidance (NJDEP, 2013), a site-specific evaluation was conducted to further evaluate potential on-site VI pathways.

Results of the site-specific evaluation recommended further evaluation of the potential soil vapor pathway for on-site buildings. Currently, approximately 135 potentially occupied structures have been identified in the Chambers Works manufacturing area. These include continuously and intermittently occupied structures as well as unoccupied structures (determined through field verification). Chemours intends to evaluate both continuously and intermittently occupied types of structures. A phased approach for the investigation was proposed and implemented as detailed in the NJDEP-approved VI RIWP (URS, 2014a). Chemours has addressed structures with continuous occupancy first. This initial phase of investigation was completed in April/May 2014, with Phase II being completed in February/March 2016.

Phase I of the VI investigation was conducted in April 2014. The initial phase of the investigation consisted of sub-slab soil gas sampling at 15 structures as documented in the VI RIWP (URS, 2014a). Confirmatory sub-slab sampling combined with indoor/ambient air sampling was then conducted in May 2015 for the 12 buildings where exceedances of NJNRSGSLs were identified during the April 2014 investigation. Results from the May 2015 sampling event identified a VC in one building (J-27) for chloroform. Follow-up indoor air sampling was conducted in July 2015 and January 2016.

Phase II of the VI investigation was conducted between February 2016 and April 2016, which sampled 30 additional buildings. During the Phase II VI investigation, constituents detected above NJNRSGSLs in the sub-slab soil gas included: 1,1,2-trichlorotrifluoroethane (Freon 113), 1,1-dichloroethane (DCA), 1,2-DCA, 1,2-dichloropropane, benzene, bromoethene, carbon tetrachloride, chloroform, dichlorodifluoromethane (Freon 12), naphthalene, tetrachloroethene (PCE), trichloroethene (TCE), trichlorofluoromethane (Freon 11) and vinyl chloride. Sub-slab soil gas exceedances were detected in 22 of the 30 buildings sampled. Based on the results of the sub-slab investigation, indoor/ambient air sampling was conducted for 18

of the 22 buildings in March 2016. Results from the March 2016 sampling event identified a VC in Building J-26 for chloroform and in Building 745 for PCE, and an immediate environmental concern (IEC) in Building 745 for TCE. These three sample locations were resampled on April 26, 2016 and the exceedances were confirmed.

In summary, the results of the Phase I and II VI investigation have identified complete VI pathways in three of the 45 buildings investigated. In these three buildings, response actions have been or are currently being implemented. A more detailed summary can be found in the VI Remedial Investigation Report (VIRIR, AECOM 2016).

The Phase III VI investigation was conducted between November 2016 and December 2016 and consisted of the investigation of 15 structures. During the Phase III VI investigation, constituents detected above NJNRSGSLs in the sub-slab soil gas included: Freon 113, 1,2-dichlorobenzene, 1,3-butadiene, 1,4-dichlorobenzene, benzene, carbon tetrachloride, chloroform, ethylbenzene, PCE, TCE, Freon 11, and vinyl chloride.

During the Phase III indoor air sampling, only one constituent (chloroform) was detected above NJ non-residential indoor air screening levels (NJNRIASL). A more detailed summary can be found in the Vapor Intrusion Technical Memorandum for Phase III (AECOM 2017).

Per the July 20, 2015 email correspondence between Chemours, the United States Environmental Protection Agency (EPA), and the NJDEP, proper direction was given regarding vapor investigation submittals. All vapor investigations submittals will be addressed to EPA, however, compliance with the NJDEP regulations and NJDEP's VIG remains necessary.

3.0 Overview of Actions

3.1 Location Description

Building 1207 is located within the active manufacturing area of the Chemours Chambers Works site (Block 301, Lot 1) Deepwater, NJ, Salem County.

The building is roughly 1,211 ft^2 (25.5' x 47.5'). Inside the building is divided up into two sides; a two room electrical control room (ECR) and a process side. Samples were not collected in the process side due to the presence of process hazards. The building has individual space heating and cooling units for climate control.

3.2 Existing Data and Forms

Analytical results are provided in Tables 1 and 2 along with the NJDEP Vapor Mitigation Form and Data Spreadsheet found in Appendices A and B, respectively. The NJDEP VC Notification can be found in Appendix C.

During two rounds of indoor air sampling, chloroform was detected in Building 1207 in two locations (AOC3-JL-1207-1 and AOC3-JL-1207-2) (see Figure 1). Chloroform concentrations ranged between 3 micrograms per cubic meter ($\mu g/m^3$) and 6 $\mu g/m^3$. The NJIASL for chloroform is 2 $\mu g/m^3$.

3.3 Proposed Mitigation

In order to mitigate the vapor concern within Building 1207, exhaust fans will be installed. The exhaust fans will be in continuous operation to increase air flow through the building. This will increase the air exchange rate within the building in order to regulate indoor air quality (IAQ) so that applicable NJIASLs are not exceeded.

A building-specific diagnostic test will be performed to assess the performance and airflow characteristics of the exhaust fans by measuring temperatures, rotational speeds, air velocities, and differential pressures. The building foundation will also be inspected to identify potential routes of soil gas entry (i.e., cracks in slabs/walls, construction joints, annular space around utility pipe penetrations, floor drains, etc.). The potential entry points will be surveyed with a portable photoionization detector (PID) or flame-ionization detector (FID) to measure discrete detections (greater than background) at particular points where VI may be occurring. Consistent with NJDEP's VIG, possible entry points will be sealed as follows:

Small Cracks and Joints: Accessible/visible cracks and joints up to 1/8-inch in width and depth will be sealed with an elastomeric sealant in accordance with the manufacturer's instructions. The sealant will be appropriate for concrete sealing, have low VOC content (i.e., less than 100 grams VOCs per liter), lower odor, and not contain carcinogenic materials. Surfaces to be sealed will be cleaned, dried, and free of soil, decomposed concrete, dust, grease, and other deleterious debris. Cracks will be sealed by forcing the elastomeric sealant into the crack and smoothing at or slightly below the floor/wall surface to create a complete seal to each edge of the crack.

Large Cracks and Joints: Accessible/ visible cracks and joints greater than 1/8-inch in width and depth will be sealed utilizing a foam backer rod or other comparable filler material per the manufacturer's instructions and/or filled with non-shrinking cementitious materials. Backer rod will be approximately 25 percent larger than the width of the crack.

Backer rods will be installed using a roller or flat sided tool to prevent puncture of the rods during installation.

Utility Pipe Penetrations: Utility penetrations will be sealed with material sufficient to reduce the potential for soil gas migration along the conduit to the interior of the building.

The mitigation system will be modified as needed to sustain compliance with applicable NJIASLs. If modification or retrofitting cannot be conducted, then alternative mitigation measures (such as sub-slab depressurization) will be evaluated.

3.4 System Operation, Maintenance, and Monitoring

The following activities will be conducted and recorded to support the long-term and effective operation of the protectiveness of the mitigation system:

- The exhaust fan(s) will be checked for unusual noise and/or vibration;
- Foundation/wall sealing will be checked for any additional areas requiring sealing/re-sealing;
- Post-installation proficiency indoor air sample collection will be performed to indicate indoor air concentrations remain below applicable NJIASLs.

Routine maintenance will include regularly scheduled inspections of the protective vapor mitigation system(s) and preventive maintenance. Results of each inspection will be documented on appropriate maintenance field forms and submitted to NJDEP and EPA, as required, to document that the protective measures are still in-place and functioning properly.

Building operators will be given a telephone number to use at any time if they have questions or if they suspect a problem with the system. Calls by operators will be responded to by conducting a non-routine maintenance visit to inspect and repair, if necessary, the system. The system's "as found" and "as left" operating performance will be documented accordingly.

The system monitoring timeframes will be as follows:

Commission Timeframe	30 – 45 days after system startup Commission Parameters: indoor air samples, system air flow measurements, pressure measurements.
Verification Sampling (VS)	Same day following system commissioning Parameters: Minimum one round of indoor air samples in heating season. Collect appropriate system diagnostic measurements to establish baseline values.
Operations, Maintenance, and Monitoring (OMM)	First Year OMM Quarterly system inspection; verification of commissioning values. Second Year OMM & Beyond Annual system inspection; annual collection of diagnostic measurements and verification with baseline values, for as long as the building is in use.
Corrective Actions during VS or OMM	For an exceedance of applicable NJIASLs or variation from commissioning values: -Check system for malfunctions, modify or augment the system; -Re-commission the system; and -Collect VS and re-start OMM

3.5 Post-Mitigation Indoor Air Sampling

Post-mitigation indoor air sampling will be conducted after the after the exhaust fan installation has been completed to evaluate the indoor air quality in Building 1207. Post-mitigation indoor air samples will be collected from the same investigation locations within Building 1207, no less than one month following system commissioning. Indoor air sample results will be compared to NJIASLs for non-residential land use, to verify the effectiveness of the exhaust fan installation. Ambient (outdoor) air samples will also be collected simultaneously with the indoor air samples over a 10-12-hour period. The ambient air sample location will be selected based on a forecast of the prevailing wind direction for the sampling period.

Samples will be submitted for laboratory analysis for chloroform by EPA TO-15 Method. Sample results will be reported by the laboratory to the method detection limit (MDL). Sample analysis will be conducted by TestAmerica Laboratories in Burlington, Vermont, or other laboratory as certified by NJ.

Sampling and analysis will be performed in accordance with the Quality Assurance Project Plan (QAPP) previously provided in the VI RIWP (URS, 2014a).

The results of this sampling and data evaluation will be reported per applicable NJDEP reporting requirements.

3.6 Reporting

A VI Response Action Report and applicable NJDEP Site Remediation Program (SRP) forms will be submitted to the NJDEP and EPA documenting that the exhaust fans are effective at addressing the VI pathway. The VI Response Action Report will include the following:

- General history and physical setting of the site;
- Identification of receptors in the building;
- Map of building location;
- Design and as-built drawings of the mitigation system;
- Description and dates of each vapor monitoring event (i.e., indoor air sampling, communication testing, etc.);
- Summary and justification of mitigation system installation;
- Pre-mitigation communication testing results;
- Pre- and post-indoor air sampling results;
- Building survey forms and permits(where applicable);
- NJDEP Vapor Intrusion Mitigation System Inspection Checklist;
- Summary of system diagnostic test measurements and commissioning values;
- Certification of a NJDEP-licensed professional engineer; and
- OMM Plan.

4.0 References

URS. 2014a. *Vapor Intrusion Remedial Investigation Work Plan*. DuPont Chambers Works Complex, Deepwater, New Jersey. February 2014.

URS. 2014b. *Comprehensive RCRA Facility Investigation Report*. DuPont Chambers Works Complex, Deepwater, New Jersey. October 2014.

NJDEP 2013. *Vapor Intrusion Guidance*. NJDEP, January 2013.

Tables

Table 1
Building 1207 Sub Slab Soil Gas Analytical Data 2016
Chemours Chambers Works
Deepwater, New Jersey

Analyte	Units	NJ NRSGS	Field Sample ID Location Sample Date	VIPH3-SG-AOC3-JL-1207-1 AOC3-JL-1207-1 11/10/2016	VIPH3-SG-AOC3-JL-1207-2 AOC3-JL-1207-2 11/10/2016
Volatile Organic Compounds (VOCs)					
1,1,1-Trichloroethane	UG/M3	1100000		<2000	<1900
1,1,2,2-Tetrachloroethane	UG/M3	34		<2500	<2300
1,1,2-Trichloroethane	UG/M3	38		<2000	<1900
1,1,2-Trichlorotrifluoroethane	UG/M3	6600000		2200000	1100000
1,1-Dichloroethane	UG/M3	380		<1500	<1400
1,1-Dichloroethene	UG/M3	44000		21000	6300
1,2,4-Trichlorobenzene	UG/M3	440		<6800	<6300
1,2-Dibromoethane (EDB)	UG/M3	38		<2800	<2600
1,2-Dichlorobenzene	UG/M3	44000		<2200	<2100
1,2-Dichloroethane	UG/M3	24		<1500	<1400
1,2-Dichloropropane	UG/M3	61		<1700	<1600
1,3-Butadiene	UG/M3	20		<810	<760
1,4-Dichlorobenzene	UG/M3	56		<2200	<2100
Acetone	UG/M3	6800000		<22000	<20000
Allyl Chloride	UG/M3	100		<2900	<2700
Benzene	UG/M3	79		<1200	<1100
Bromodichloromethane	UG/M3	34		<2500	<2300
Bromoethene	UG/M3	22		<1600	<1500
Bromoform	UG/M3	560		<3800	<3500
Carbon Disulfide	UG/M3	150000		<2800	<2700
Carbon Tetrachloride	UG/M3	100		<2300	<2200
Chlorobenzene	UG/M3	11000		<1700	<1600
Chlorodibromomethane	UG/M3	43		<3100	<2900
Chloroform	UG/M3	27		**74000**	**230000**
cis-1,3-Dichloropropene	UG/M3	150		<1700	<1600
Cyclohexane	UG/M3	1300000		<1300	<1200
Dichlorodifluoromethane	UG/M3	22000		<4500	<4200
Ethyl Chloride	UG/M3	2200000		<2400	<2300
Ethylbenzene	UG/M3	250		<1600	<1500
Hexachlorobutadiene	UG/M3	53		<3900	<3600
Hexane	UG/M3	150000		<1300	<1200
Meta- And Para-Xylene	UG/M3	--		<4000	<3700
Methyl Bromide	UG/M3	1100		<1400	<1300
Methyl Chloride	UG/M3	20000		<1900	<1800
Methyl Ethyl Ketone	UG/M3	1100000		<2700	<2500
Methyl Isobutyl Ketone	UG/M3	660000		<3700	<3500
Methyl Tertiary Butyl Ether	UG/M3	2400		<1300	<1200
Methylene Chloride	UG/M3	61000		<3200	<3000
Naphthalene	UG/M3	26		<4800	<4500
Ortho-Xylene	UG/M3	--		<1600	<1500
Styrene	UG/M3	220000		<1600	<1500
Tetrachloroethene	UG/M3	2400		**350000**	**62000**
Toluene	UG/M3	1100000		<1400	<1300
trans-1,2-Dichloroethene	UG/M3	13000		<1500	<1400
trans-1,3-Dichloropropene	UG/M3	150		<1700	<1600
Trichloroethene	UG/M3	150		**4300**	<1800
Trichlorofluoromethane	UG/M3	150000		<2100	<1900
Vinyl Chloride	UG/M3	140		<940	<870
Xylenes	UG/M3	22000		<5600	<5200

NJ NRSGSL - New Jersey Non-Residential Soil Gas Screening Level (March 2013)
Yellow shading indicates exceedance of SL
Gray shading indicates detection limit above SL

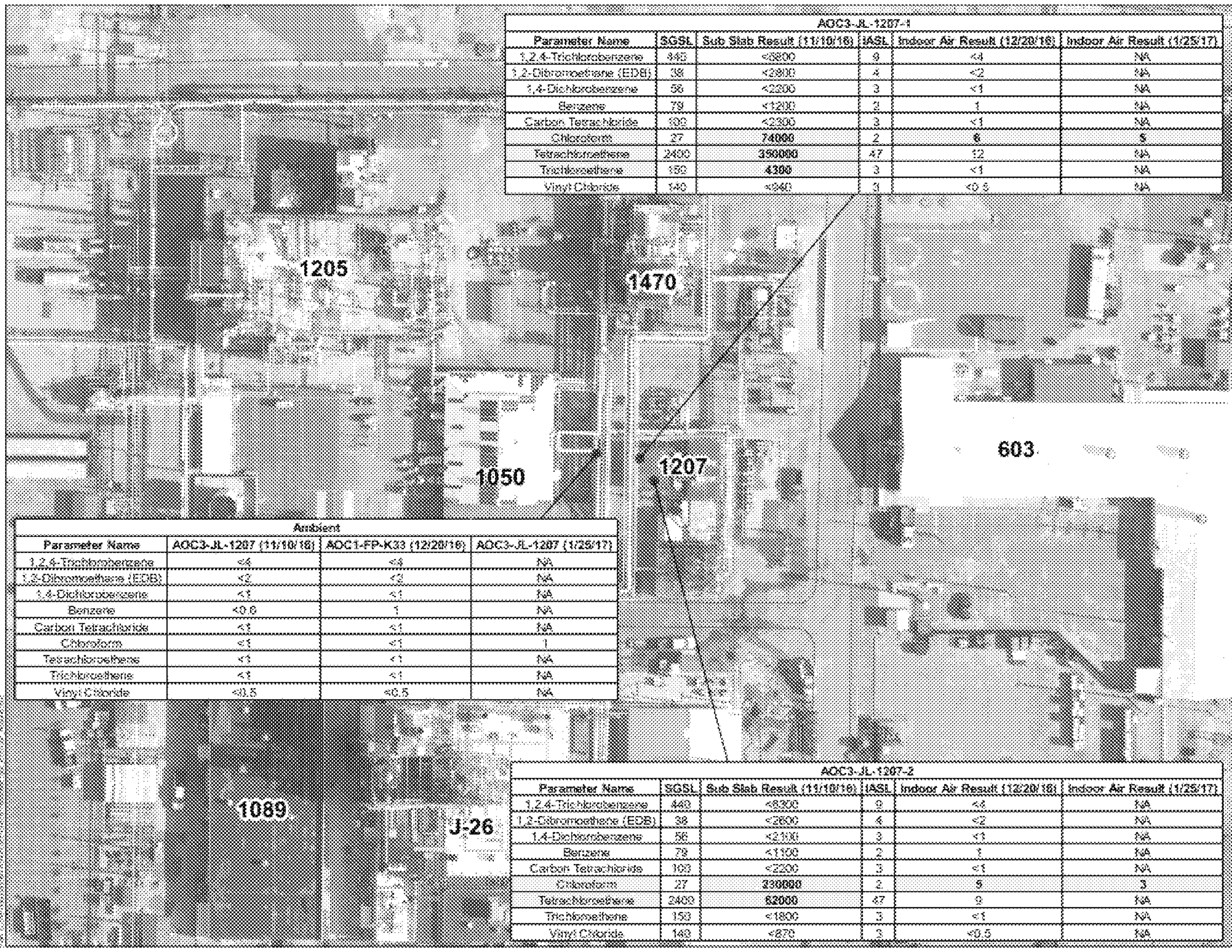
Table 2
Building 1207 Indoor Air Analytical Data 2016
Chemours Chambers Works
Deepwater, New Jersey

Analyte[1]	Units	NJ NRIASL	NJ NR RAL	Field Sample ID Location Sample Date	VIPH3-IA-AOC3-JL-1207-1-122016 AOC3-JL-1207-1 12/20/2016	VIPH3-IA-AOC3-JL-1207-2-122016 AOC3-JL-1207-2 12/20/2016	VIPH3-IA-AOC3-JL-1207-1-012517 AOC3-JL-1207-1-012517 01/25/2017	VIPH3-IA-AOC3-JL-1207-2-012517 AOC3-JL-1207-2-012517 01/25/2017
Volatile Organic Compounds (VOCs)								
1,1,2,2-Tetrachloroethane	UG/M3	3	20		--	--	--	--
1,1,2-Trichlorotrifluoroethane	UG/M3	130000	260000		--	--	--	--
1,2,4-Trichlorobenzene	UG/M3	9	18		<4	<4	--	--
1,2-Dibromoethane (EDB)	UG/M3	4	4		<2	<2	--	--
1,2-Dichloroethane	UG/M3	2	50		--	--	--	--
1,3-Butadiene	UG/M3	1	18		--	--	--	--
1,4-Dichlorobenzene	UG/M3	3	100		<1	<1	--	--
Benzene	UG/M3	2	160		1	1	--	--
Carbon Tetrachloride	UG/M3	3	200		<1	<1	--	--
Chloroform	UG/M3	2	50		**6**	**5**	**5**	**3**
Ethylbenzene	UG/M3	5	500		--	--	--	--
Naphthalene	UG/M3	3	26		--	--	--	--
Tetrachloroethene	UG/M3	47	360		12	9	--	--
Trichloroethene	UG/M3	3	18		<1	<1	--	--
Trichlorofluoromethane	UG/M3	3100	6200		--	--	--	--
Vinyl Chloride	UG/M3	3	300		<0.5	<0.5	--	--

NJ IASL - New Jersey Indoor Air Screening Level (March 2013)
NJ RAL - New Jersey Rapid Action Level (March 2013)
Yellow shading indicates exceedance of SL
Orange shading indicates exceedance of RAL

1 - Indoor air analyte list based on constituents in soil gas with an exceedance. AOC-specific constituents with GWSL exceedances in groundwater and with elevated detection limits in soil gas were also included, where applicable.

Figures



AOC3-JL-1207-1					
Parameter Name	SGSL	Sub Slab Result (11/10/16)	IASL	Indoor Air Result (12/20/16)	Indoor Air Result (1/25/17)
1,2,4-Trichlorobenzene	440	<5800	9	<4	NA
1,2-Dibromoethane (EDB)	38	<2800	4	<2	NA
1,4-Dichlorobenzene	56	<2200	3	<1	NA
Benzene	79	<1200	2	1	NA
Carbon Tetrachloride	100	<2300	3	<1	NA
Chloroform	27	**74000**	2	**6**	**5**
Tetrachloroethene	2400	**350000**	47	12	NA
Trichloroethene	150	**4300**	3	<1	NA
Vinyl Chloride	140	<940	3	<0.5	NA

Ambient			
Parameter Name	AOC3-JL-1207 (11/10/16)	AOC1-FP-K33 (12/20/16)	AOC3-JL-1207 (1/25/17)
1,2,4-Trichlorobenzene	<4	<4	NA
1,2-Dibromoethane (EDB)	<2	<2	NA
1,4-Dichlorobenzene	<1	<1	NA
Benzene	<0.6	1	NA
Carbon Tetrachloride	<1	<1	NA
Chloroform	<1	<1	1
Tetrachloroethene	<1	<1	NA
Trichloroethene	<1	<1	NA
Vinyl Chloride	<0.5	<0.5	NA

AOC3-JL-1207-2					
Parameter Name	SGSL	Sub Slab Result (11/10/16)	IASL	Indoor Air Result (12/20/16)	Indoor Air Result (1/25/17)
1,2,4-Trichlorobenzene	440	<5300	9	<4	NA
1,2-Dibromoethane (EDB)	38	<2600	4	<2	NA
1,4-Dichlorobenzene	56	<2100	3	<1	NA
Benzene	79	<1100	2	1	NA
Carbon Tetrachloride	100	<2200	3	<1	NA
Chloroform	27	**230000**	2	**9**	**3**
Tetrachloroethene	2400	**62000**	47	9	NA
Trichloroethene	150	<1800	3	<1	NA
Vinyl Chloride	140	<870	3	<0.5	NA

LEGEND

SUB-SLAB SOIL GAS SAMPLE LOCATION

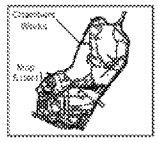
Notes:
1 - All Sub Slab Soil Gas (SSSG) locations were analyzed for TO-15, only exceedances are listed on this figure.

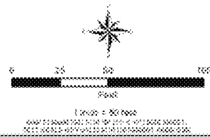
2 - Indoor air analyte list based on constituents in soil gas with an exceedance, AOC-specific constituents with GWSL exceedances in groundwater and with elevated detection limits in soil gas were also included, where applicable.

NJ NRSGSL - New Jersey Non-Residential Soil Gas Screening Level (March 2013)
NJ IASL - New Jersey Indoor Air Screening Level (March 2013)

Yellow shading indicates exceedance of SL.
Report Units are ug/m3

Map Projection: NAD83 NJ State Plane feet
2014 Aerial imagery provided by Axis Geospatial LLC.





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BUILDING 1207 SUB-SLAB SOIL GAS AND INDOOR AIR SAMPLING LOCATIONS AND RESULTS

VAPOR CONCERN MITIGATION PLAN
CHEMOURS CHAMBERS WORKS COMPLEX
DEEPWATER, NEW JERSEY

18001	60388469
T.MCGEE	2/10/2017
C.DUFFY	1
T.MCGEE	

Appendix A

Chemours CWK Vapor Mitigation Form (NJDEP Form)

New Jersey Department of Environmental Protection
Site Remediation Program

VAPOR CONCERN (VC) – RESPONSE ACTION FORM

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: Chemours Chambers Works

List all AKAs: DuPont Chambers Works

Street Address: Route 130

Municipality: Pennsville (Township, Borough or City)

County: Salem Zip Code: 08023

Program Interest (PI) Number(s): 008221

Case Tracking Number(s):

SECTION B. NJDEP CASE MANAGER

Case Manager *(if assigned)*: Linda Range

SECTION C. OFF SITE SOURCE CLAIM

Are you claiming the source of the discharge is located off-site and is not attributable to the site? ..... ☐ Yes ☒ No

If "Yes," justification for this claim must be submitted with this form pursuant to N.J.A.C. 7:26-3.9.

SECTION D. FEE BILLING CONTACT

Business Name: Existing case led site Phone:

Contact: Title:

Phone Number: Ext.: Fax:

Mailing Address:

Municipality: State: Zip Code:

Email Address:

Note: IEC and VC cases are subject to traditional oversight costs in addition to annual Remediation Fees. Please refer to instructions.

SECTION E. TYPE OF SUBMISSION

☐ **14-Day Notification**

1. Date of initial VC Identification: 01/23/2017
2. Date of Health Department Notification:..... 02/06/2017

   Contact Name/Agency: Amber Hawk/ Salem County Health Department
3. Is the vapor intrusion pathway complete? ..... ☒ Yes ☐ No

   Answer "Yes," only if both a subslab and indoor air sample exceed the applicable screening level for the contaminant of concern. If the answer is "No," then this form should not be submitted to the NJDEP.

   If both a subslab and indoor air sample exceed the applicable Rapid Action Level for the contaminant of concern then this is an IEC, not a VC, and the "Immediate Environmental Concern (IEC) – Response Action Form" should be submitted to the NJDEP, instead of this form.

☒ **60-Day Reporting – VC Mitigation Plan**

☐ **180-Day Reporting – VC Mitigation Response Action Report**

SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: The Chemours Company

Representative First Name: Stephen Representative Last Name: Shoemaker

Title: Remediation Manager, Corporate Remediation Group

Phone Number: Ext: Fax:

Mailing Address: 1007 Market Street, DuPont Building, Suite #3094

City/Town: Wilmington State: DE Zip Code: 19898

Email Address: Stephen.H.Shoemaker@chemours.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: Date: 3-23-2017

Name/Title: Stephen H. Shoemaker - Remediation Manager

SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: .....

First Name: ..... Last Name: .....

Phone Number: ..... Ext: ..... Fax: .....

Mailing Address: .....

City/Town: ..... State: ..... Zip Code: .....

Email Address: .....

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRA Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:

☐ *directly oversaw and supervised all of the referenced remediation, and\or*

☐ *personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: ..... Date: .....

LSRP Name/Title: .....

Company Name: .....

Completed form should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

And electronically to: DEPSRP_ICU@dep.nj.gov

Appendix B

Chemours CWK Vapor Mitigation Spreadsheet (NJDEP Form)

VERSION 1.3
DATE: 03/28/16

VAPOR INTRUSION: IEC/VC SPREADSHEET
CASE NAME: Chemours Chambers Works
PI#: 008221
LSRP NAME:
LSRP LICENSE #:
SPREADSHEET REVISION DATE: 2/6/2017

(For help see instructions and Example check box below)

DIRECTIONS FOR ADDING DATA ROWS AND ADDITIONAL LOCATIONS

To Add Additional Rows for a sample location
LEAVE BLUE ROW BLANK
Right click the BLUE ROW # and Select INSERT
New Row will be added above the BLUE ROW

To add new locations select New Location Template tab at bottom of screen.
Follow directions on New Location Template sheet

PROPERTY ID		PROPERTY OWNER/ OCCUPANT INFORMATION									ANALYTICAL RESULTS (Bold all exceedances)										VI Designation	INTERIM RESPONSE - 14 DAYS (FOR IEC ONLY)	VC REMEDIATION SYSTEM IMPLEMENTED - 120 DAYS / IEC ENGINEERED SYSTEM RESPONSE ACTION - 60 DAYS			COMMENTS
Block	Lot	Name	Relation	#	Street	City	Zip Code	Phone	email	Reason Not Sampled	Date Sampled	Sample Type	Sample Description	Sample IDS	COC1	ug/m³	COC2	ug/m³	COC3	ug/m³		Type of Interim Response	Date Installed	Engineered Response	System Termination Date	
301	1	The Chemours Company Contact: Ed Lutz	owner	Bldg 1207	Laboratory Road	Deepwater	08023	302-773-4295	Edmund.J.Lutz@Chemours.com		12/20/2016	initial	IA 1st floor	AOC5-JL-1207-1	Chloroform	[illegible]					VC- non res.					Slab on grade
											12/20/2016	initial	IA 1st floor	AOC5-JL-1207-2	Chloroform	[illegible]										
											1/20/2017	confirmation	IA 1st floor	AOC5-JL-1207-1-012017	Chloroform	[illegible]										
											1/20/2017	confirmation	IA 1st floor	AOC5-JL-1207-2-012017	Chloroform	[illegible]										
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Appendix C

Chemours CWK Vapor Concern Notice February 6, 2017 (NJDEP Form)

The Chemours Company
Route 130 and Canal Road
Deepwater, NJ 08023

February 6, 2017

Ms. Linda Range
NJ Department of Environmental Protection
CHMM, Site Manager
Bureau of Case Management
401 East State Street
Trenton, NJ 08625-0028

Vapor Intrusion Vapor Concern Response Action Form
Chemours Chambers Works, Deepwater, NJ
SI# 008221

Dear Ms. Range:

On behalf of Chemours and in accordance with N.J.A.C. 7:26E-1.15 (Receptor Evaluation-Vapor Intrusion) and New Jersey Department of Environmental Protection's (NJDEP's) VIG, AECOM is submitting a Vapor Concern Response Action Form.

This form is to comply with the 14 day notification that two indoor air samples had an exceedance of the IASL's for chloroform within the Chemours Chambers Works manufacturing complex in Salem County, New Jersey. The findings of this evaluation will be reported in accordance with the VI Guidance.

If you have any questions or want to discuss further, please call me at 302-773-4293.

Sincerely,

Edward J Lutz
Project Director
Corporate Remediation – NJ

cc: EPA Region 2 (hard copy and CD)
AECOM Chambers Works File (60388469) (hard copy)
Salem County Board of Health
Chemours File

New Jersey Department of Environmental Protection
Site Remediation Program

VAPOR CONCERN (VC) – RESPONSE ACTION FORM

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: Chemours Chambers Works

List all AKAs: DuPont Chambers Works

Street Address: Route 130

Municipality: Pennsville (Township, Borough or City)

County: Salem Zip Code: 08023

Program Interest (PI) Number(s): 008221

Case Tracking Number(s):

SECTION B. NJDEP CASE MANAGER

Case Manager *(if assigned)*: Linda Range

SECTION C. OFF SITE SOURCE CLAIM

Are you claiming the source of the discharge is located off-site and is not attributable to the site? ☐ Yes ☒ No

If "Yes," justification for this claim must be submitted with this form pursuant to N.J.A.C. 7:26-3.9.

SECTION D. FEE BILLING CONTACT

Business Name: Existing case led site Phone:

Contact: Title:

Phone Number: Ext.: Fax:

Mailing Address:

Municipality: State: Zip Code:

Email Address:

Note: IEC and VC cases are subject to traditional oversight costs in addition to annual Remediation Fees. Please refer to instructions.

SECTION E. TYPE OF SUBMISSION

☒ **14-Day Notification**

1. Date of initial VC Identification: 01/23/2017
2. Date of Health Department Notification: 02/06/2017
   Contact Name/Agency: Amber Hawk/ Salem County Health Department
3. Is the vapor intrusion pathway complete? ☒ Yes ☐ No

   Answer "Yes," only if both a subslab and indoor air sample exceed the applicable screening level for the contaminant of concern. If the answer is "No," then this form should not be submitted to the NJDEP.

   If both a subslab and indoor air sample exceed the applicable Rapid Action Level for the contaminant of concern then this is an IEC, not a VC, and the "Immediate Environmental Concern (IEC) – Response Action Form" should be submitted to the NJDEP, instead of this form.

☐ **60-Day Reporting – VC Mitigation Plan**

☐ **180-Day Reporting – VC Mitigation Response Action Report**

SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: The Chemours Company

Representative First Name: Sheryl Representative Last Name: Telford

Title: Director, Corporate Remediation Group

Phone Number: (302) 773-2597 Ext: Fax:

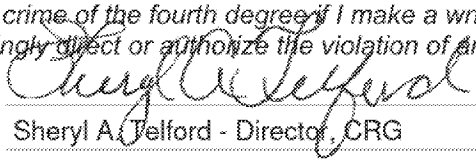
Mailing Address: 1007 Market Street, DuPont Building, Suite #3094

City/Town: Wilmington State: DE Zip Code: 19898

Email Address: Sheryl.A.Telford@chemours.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature:  Date: 2/6/2017

Name/Title: Sheryl A. Telford - Director, CRG

SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: _____

First Name: _____ Last Name: _____

Phone Number: _____ Ext: _____ Fax: _____

Mailing Address: _____

City/Town: _____ State: _____ Zip Code: _____

Email Address: _____

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRA Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:

☐ *directly oversaw and supervised all of the referenced remediation, and\or*

☐ *personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: _____ Date: _____

LSRP Name/Title: _____

Company Name: _____

Completed form should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

And electronically to: DEPSRP_ICU@dep.nj.gov

VAPOR INTRUSION: [illegible] SPREADSHEET

VERSION 1.5
DATE: [illegible]

CASE NAME:	Chemours Chambers Works
PI#:	008[illegible]
LSRP NAME:	
LSRP LICENSE #:	
SPREADSHEET REVISION DATE:	2/6/2017

(For help see Instructions and Example sheet tabs below)

DIRECTIONS FOR ADDING DATA ROWS AND ADDITIONAL LOCATIONS

To Add Additional Rows for a sample location
LEAVE BLUE ROW BLANK
Right click the BLUE ROW # and Select INSERT
New Row will be added above the BLUE ROW

To add new locations select New Location Template tab at bottom of screen.
Follow directions on New Location Template sheet

PROPERTY ID		PROPERTY OWNER/ OCCUPANT INFORMATION									ANALYTICAL RESULTS (bold all exceedances)										VI Designation	IEC RESPONSE - 14 DAYS (FOR IEC ONLY)	VI MITIGATION SYSTEM IMPLEMENTATION - 120 DAYS / IEC ENGINEERED SYSTEM RESPONSE ACTION - 60 DAYS			COMMENTS
Block	Lot	Name	Owner/Renter	#	Street	City	Zip Code	Phone	email	Reason Not Sampled	Date Sampled	Sample Type	Sample Description	Sample ID#	COC1	ug/m³	COC2	ug/m³	COC3	ug/m³		Type of Interim Response	Date Installed	Engineered Response	System Termination Date	
301	1	The Chemours Company Contact: Ed Lutz	owner	Bldg 1007	Laboratory Road	Deepwater	08023	856-775-[illegible]	[illegible]@chemours.com		12/25/2016	Initial	IA 1st floor	AOC3-JL-1207-1	Chloroform	9					VC - non res.					Slab on grade
											12/20/2016	Initial	IA 1st floor	AOC3-JL-1207-2	Chloroform	6										
											1/26/2017	confirmation	IA 1st floor	AOC3-JL-1207-1-012617	Chloroform	5										
											1/26/2017	confirmation	IA 1st floor	AOC3-JL-1207-2-012617	Chloroform	5										
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Appendix B

Chemours CWK
Vapor Mitigation Form
(NJDEP Form)

New Jersey Department of Environmental Protection
Site Remediation Program

VAPOR CONCERN (VC) – RESPONSE ACTION FORM

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: Chemours Chambers Works

List all AKAs: DuPont Chambers Works

Street Address: Route 130

Municipality: Pennsville (Township, Borough or City)

County: Salem Zip Code: 08023

Program Interest (PI) Number(s): 008221

Case Tracking Number(s):

SECTION B. NJDEP CASE MANAGER

Case Manager *(if assigned)*: Anne Pavelka (formerly Linda Range)

SECTION C. OFF SITE SOURCE CLAIM

Are you claiming the source of the discharge is located off-site and is not attributable to the site? ..... ☐ Yes ☒ No

If "Yes," justification for this claim must be submitted with this form pursuant to N.J.A.C. 7:26-3.9.

SECTION D. FEE BILLING CONTACT

Business Name: Existing case led site Phone:

Contact: Title:

Phone Number: Ext.: Fax:

Mailing Address:

Municipality: State: Zip Code:

Email Address:

Note: IEC and VC cases are subject to traditional oversight costs in addition to annual Remediation Fees. Please refer to instructions.

SECTION E. TYPE OF SUBMISSION

☐ **14-Day Notification**

1. Date of initial VC identification: 01/23/2017
2. Date of Health Department Notification:..... 02/06/2017

   Contact Name/Agency: Amber Hawk/ Salem County Health Department
3. Is the vapor intrusion pathway complete? ..... ☒ Yes ☐ No

   Answer "Yes," only if both a subslab and indoor air sample exceed the applicable screening level for the contaminant of concern. If the answer is "No," then this form should not be submitted to the NJDEP.

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☐ **60-Day Reporting – VC Mitigation Plan**

☒ **180-Day Reporting – VC Mitigation Response Action Report**

SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: The Chemours Company

Representative First Name: Stephen Representative Last Name: Shoemaker

Title: Remediation Manager, Corporate Remediation Group

Phone Number: 704-654-5879 Ext: Fax:

Mailing Address: 1007 Market Street, DuPont Building, Suite #3094

City/Town: Wilmington State: DE Zip Code: 19898

Email Address: Stephen.H.Shoemaker@chemours.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: Date: 7/18/2017

Name/Title: Stephen H. Shoemaker - Remediation Manager

SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: _____

First Name: _____ Last Name: _____

Phone Number: _____ Ext: _____ Fax: _____

Mailing Address: _____

City/Town: _____ State: _____ Zip Code: _____

Email Address: _____

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRA Section 16 d. and Section 30 b.2.

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[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:

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☐ *personally reviewed and accepted all of the referenced remediation presented herein.*

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It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

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LSRP Signature: _____ Date: _____

LSRP Name/Title: _____

Company Name: _____

Completed form should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

And electronically to: DEPSRP_ICU@dep.nj.gov

Appendix C

Chemours CWK Vapor Mitigation Spreadsheet (NJDEP Form)

VERSION 1.3
DATE: 03/2015

VAPOR INTRUSION: IEC/VC SPREADSHEET

CASE NAME: Chemours Chambers Works
PI#. 008221
LSRP NAME:
LSRP LICENSE#:
SPREADSHEET REVISION DATE: 6/6/2017

(For help see instructions and Example sheet tabs below)

DIRECTIONS FOR ADDING DATA ROWS AND ADDITIONAL LOCATIONS

To Add Additional Rows for a sample location
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Follow directions on New Location Template sheet.

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301	1	The Chemours Company Contact: Ed Lutz	owner	Bldg 1207	Laboratory Road	Deepwater	08023	302-773-4293	Edward.J.Lutz@Chemours.com		12/20/2016	initial	IA 1st floor	AOC3-JL-1207-1	Chloroform	9					VC- non res.					Slab on grade
											12/20/2016	initial	IA 1st floor	AOC3-JL-1207-2	Chloroform	5										
											1/25/2017	confirmation	IA 1st floor	AOC3-JL-1207-1-012517	Chloroform	3										
											1/25/2017	confirmation	IA 1st floor	AOC3-JL-1207-2-012517	Chloroform	5										
											5/25/2017	verification sampling	IA 1st floor	AOC3-JL-1207-1-052517	Chloroform	1							5/15/2017			
											5/25/2017	verification sampling	IA 1st floor	AOC3-JL-1207-2-052517	Chloroform	1										
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